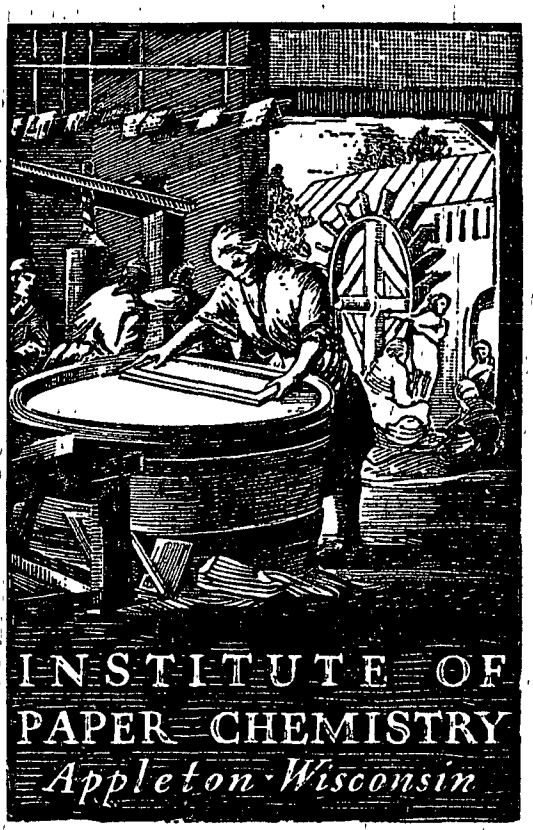

CONTINUOUS EVALUATION OF CORRUGATING MEDIUM

Project 1108-17

Report 116

A Progress Report

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

December 1, 1965

CODE LETTERS FOR PROJECT 1108-17
Report 116

Company-Mill		Machine No.	Code Letter
The Chesapeake Corporation	- West Point	1	--
Container Corporation of America	- Circleville	5	Y
Continental Can Company	- Hopewell	1	P
	- Hodge	1	--
Crown Zellerbach Corporation	- Baltimore	1	S
	- Baltimore	2	Z
	- Bogalusa	4	W
	- Lebanon	1	--
	- Lebanon	2	F
Hoerner Boxes, Inc.	- Ontonagon	1	X
International Paper Company	- Bastrop	1	V
	- Bastrop	2	T
	- Georgetown	1	R
The Mead Corporation	- Harriman	1	L
	- Knoxville	1	E
	- Lynchburg	2	U
	- Sylva	1	Q
	- Sylva	2	AA
Olin Mathieson Chemical Corporation	- W. Monroe	1	CC
	- W. Monroe	2	--
Owens-Illinois, Inc.	- Big Island	3	H
	- Tomahawk	1	D
	- Tomahawk	2	K
	- Tomahawk	3	O
Packaging Corporation of America	- Filer City	1	J
	- Filer City	2	C
St. Joe Paper Company	- Port St. Joe	1	I
St. Regis Container Corp.	- Coshocton	1	BB
Union Bag-Camp Paper Corporation	- Savannah	2	G
	- Monroe	2	M
West Virginia Pulp and Paper Company			
	- Covington	6	N
	- Covington	7	--
	- Charleston	--	--
	- Williamsburg	1	B
	- Williamsburg	2	--
Weyerhaeuser Company	- N.C. Div. - Plymouth	3	A

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS EVALUATION OF CORRUGATING MEDIUM

Project 1108-17

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to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

December 1, 1965

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THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS EVALUATION OF CORRUGATING MEDIUM

INTRODUCTION

As requested by the Technical Division of the Fourdrinier Kraft Board Institute, Inc., the reports pertinent to the continuous evaluation of corrugating medium have been prepared by The Institute of Paper Chemistry on a bimonthly instead of monthly basis since August 1, 1961. The current report presents results obtained during the months of October and November, 1965, on 191 rolls of corrugating medium representing the production of twenty-nine machines. Each of these 191 rolls of corrugating medium was evaluated for basis weight, caliper, Concora flat crush (conditioned after fluting), H. and D. flat crush on single-faced board, and runnability. The evaluation of runnability was initiated by corrugating each roll under standardized conditions on the Institute's corrugator into A-flute board at 600 feet per minute with minimum tension and recording the draw factor at this condition if the roll ran satisfactorily. If unsatisfactory runnability occurred at this speed, the corrugator was slowed down in increments of 25 f.p.m. until satisfactory runnability was obtained, i.e., no ruptured flutes. In this latter case the draw factor was recorded for the highest speed below 600 f.p.m. at which the roll ran satisfactorily. If the medium fabricated satisfactorily at 600 f.p.m. with minimum tension, further runs were made at higher tensions to determine when cracking occurred. The higher tensions used were 0.5, 1.0 and 1.5 lb. per inch. Flat crush was determined on the single-faced board obtained at a speed of 600 f.p.m. with minimum tension. The flat crush results, in addition to supplying information about quality, provide data which may be used by each participant to evaluate the relationship between Concora flat crush and combined board flat crush.

For each participating machine, test data for the current period are shown in Table I and presented graphically in Fig. 1 to 4. A tabulation of the number of rolls and type of medium evaluated is also given in Table I for each machine. The current machine test averages given in Table I are the means for each test property of the averages obtained on all rolls of corrugating medium evaluated from a given machine during the current period. In addition to the current machine test averages, Table I also presents the current F.K.I. averages, cumulative F.K.I. averages, and the F.K.I. indexes. The current F.K.I. average for each test property is the mean of the current machine averages for all machines participating in the study during a given period (excluding the current machine averages based on the evaluation of fewer than three rolls of corrugating medium as requested by the Technical Division). The cumulative F.K.I. average for each test property is the mean of the current F.K.I. averages for the previous twelve-month period excluding the average for the current period. The F.K.I. index for each test property is obtained as follows:

$$\frac{\text{current F.K.I. average}}{\text{cumulative F.K.I. average}} \times 100 = \text{F.K.I. index (\%)}$$

The F.K.I. index for each test property provides a ready means of comparing the current quality with previous results. An index greater than 100% indicates that current quality is higher than the average result for the previous twelve periods; an index below 100% indicates that current quality is lower than the average result for the previous twelve periods.

The test results obtained on the rolls submitted from the production of individual machines during the current period are shown in Tables II through XXX for Machines A through Z and Machines AA, BB and CC, respectively. The maximum, minimum and average results obtained on each roll are shown for all test properties

TABLE I

SUMMARY OF CURRENT MACHINE AVERAGES

October and November, 1965

Mill Code	No. of Rolls	Type of Medium	Basis Weight, lb.	Caliper, points	Concora Flat Crush, p.s.i.	Single-Face Flat Crush, p.s.i.
A	6	Semichemical	26.6	10.6	37.5	34.7
B	8	Semichemical	26.8	10.4	31.5	28.0
C	9	Semichemical	27.2	10.0	34.1	30.3
D	6	Semichemical	26.7	10.0	38.5	33.8
E	4	Semichemical	25.2	11.4	29.7	26.7
F	4	Semichemical	26.3	9.6	29.4	29.3
G	8	Semichemical	26.7	9.0	36.4	32.3
H	4	Semichemical	27.0	10.9	34.4	31.5
I	4	Kraft	27.4	9.1	30.7	28.1
J	9	Semichemical	26.5	10.2	33.1	28.9
K	8	Semichemical	26.6	10.6	36.2	32.8
L	10	Semichemical	26.8	10.5	32.5	29.9
M	5	Bogus	29.0	12.0	33.2	31.6
N	8	Semichemical	26.5	10.6	33.5	30.0
O	5	Semichemical	27.3	11.2	35.6	31.3
P	8	Semichemical	28.2	11.1	37.4	34.1
Q	8	Semichemical	27.4	10.1	33.2	29.4
R	5	Semichemical	27.3	10.3	40.8	37.1
S	8	Bogus	26.8	9.8	33.9	30.4
T	10	Semichemical	26.7	10.5	37.9	34.9
U	8	Semichemical	26.3	10.5	34.6	30.0
V	6	Semichemical	26.9	10.7	41.0	37.5
W	5	Semichemical	27.5	10.9	36.9	33.8
X	3	Semichemical	27.2	10.2	37.7	Note[a]
Y	8	Semichemical	27.1	10.3	33.3	31.9
Z	8	Bogus	27.4	10.1	37.9	34.2
AA	8	Semichemical	27.1	10.2	34.6	31.1
BB	4	Bogus	27.6	10.3	36.3	32.6
CC	4	Semichemical	28.3	11.0	34.1	29.6
Total	191					
Current F.K.I. average			27.0	10.4	35.0	31.6
Cumulative F.K.I. average			27.0	10.3	35.5	32.2
F.K.I. index, %			100.0	101.2	98.7	98.2

[a] Current machine average has been omitted in compliance with the Technical Division's request that current machine averages based on evaluations of fewer than three rolls of medium should be excluded from the summary table and from the calculation of the current F.K.I. averages.

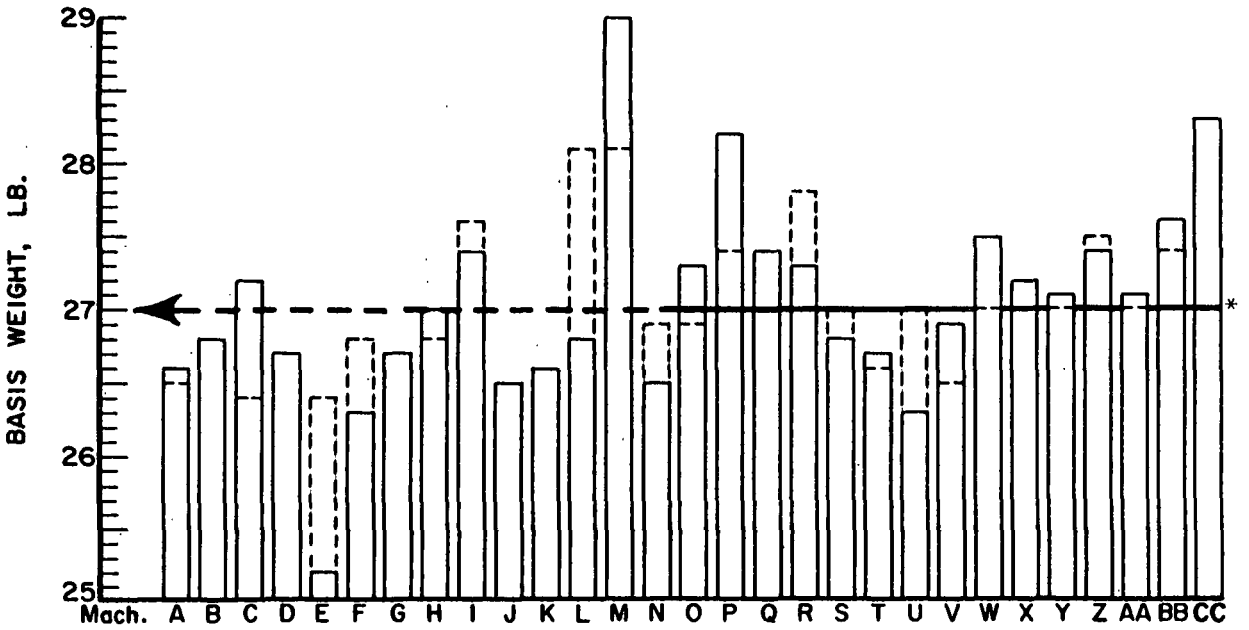

Figure 1. Comparison of Basis Weight Results

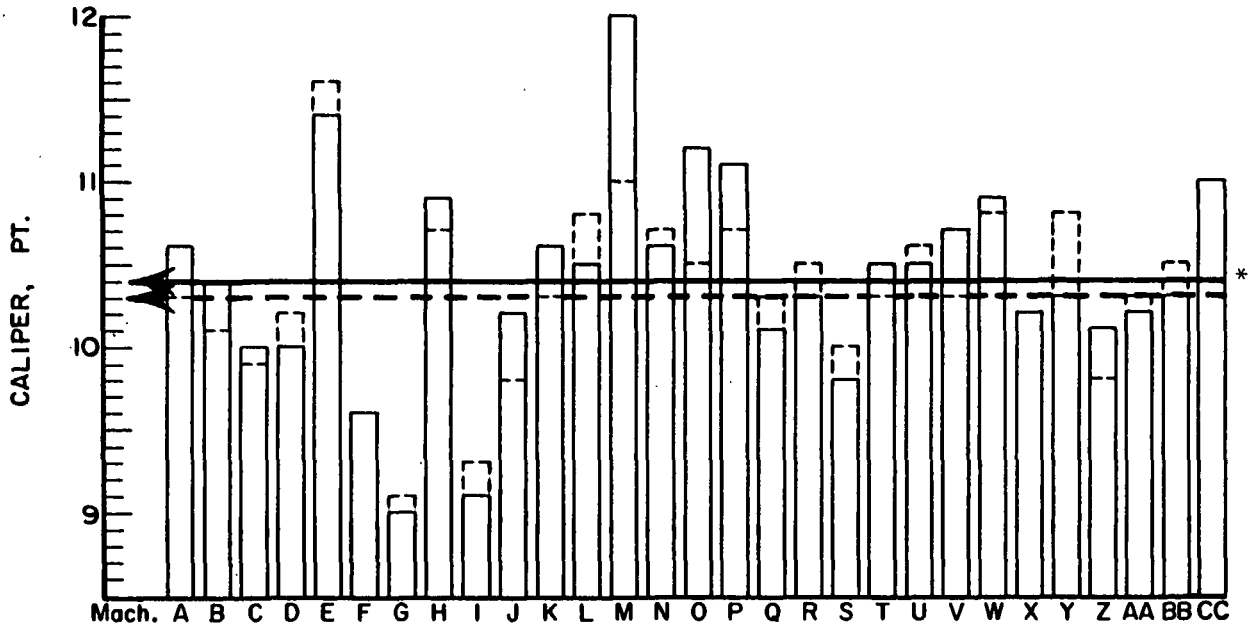

Figure 2. Comparison of Caliper Results

* "F.K.I. av."

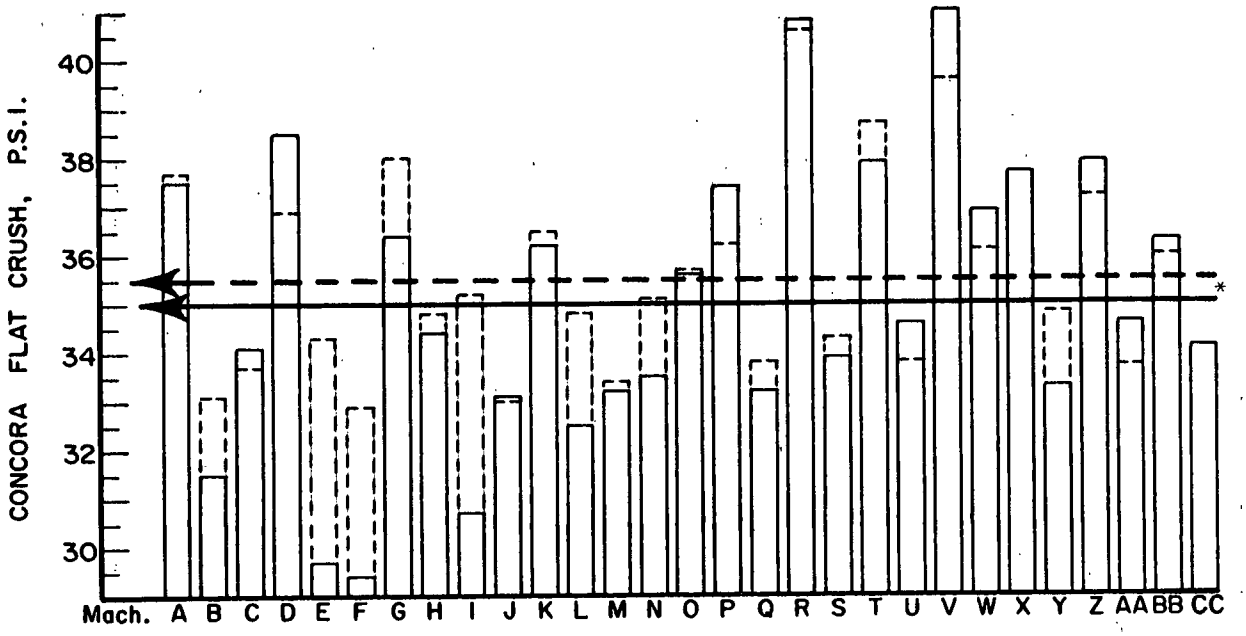

Figure 3. Comparison of Concora Flat Crush Results

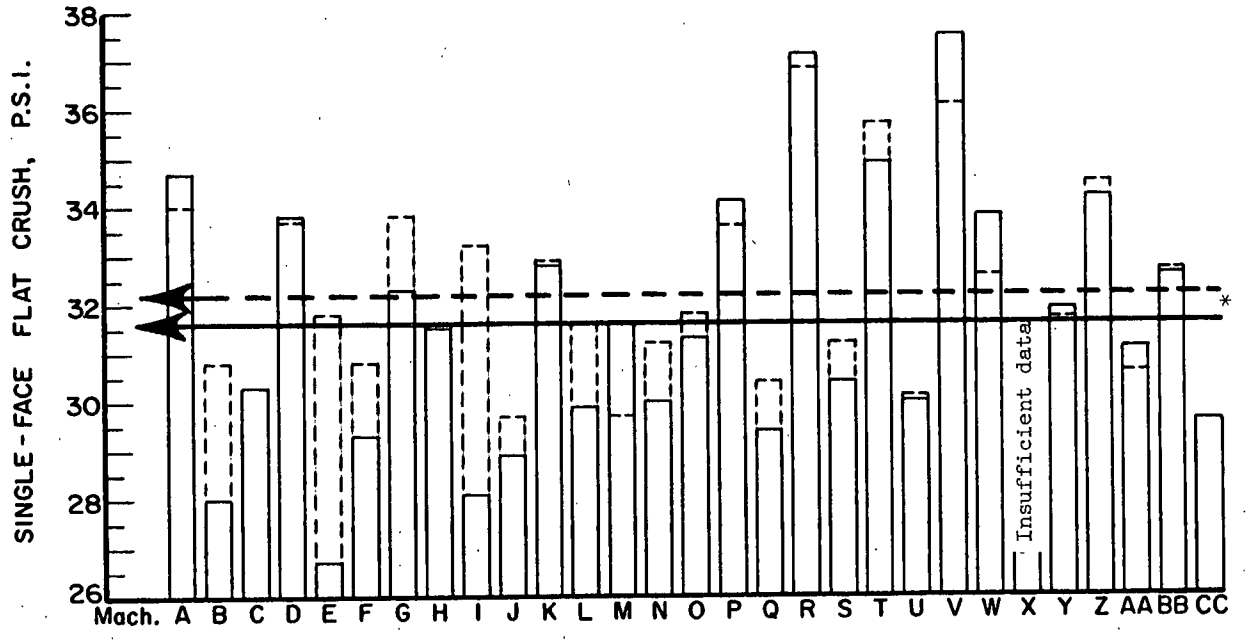

Figure 4. Comparison of Single-Face Flat Crush Results

* "F.K.I. av."

TABLE II

SUMMARY OF TEST RESULTS FOR MACHINE A
October and November, 1965

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq.ft.	Caliper, pt. Max.	Caliper, pt. Min.	Caliper, pt. Av.	Concora Flat Crush, p.s.i. Max.	Concora Flat Crush, p.s.i. Min.	Concora Flat Crush, p.s.i. Av.	Single-Face Flat Crush, p.s.i. Max.	Single-Face Flat Crush, p.s.i. Min.	Single-Face Flat Crush, p.s.i. Av.	Runnability, lb./in.[a]	draw factor[b]
A-1	9-13-65	10-5-65	478	26.3	11.8	11.0	11.5	37.2	33.6	35.5	36.4	33.4	34.5	Note[c]	1.545
A-2	9-29-65	11-16-65	61	27.4	10.6	10.0	10.4	40.8	39.0	39.6	37.8	35.6	36.7	1/2	1.561
A-3	10- 7-65	10-22-65	347	26.3	10.9	9.9	10.2	40.2	37.8	39.0	35.4	32.8	34.4	1/2	1.563
A-4	10-11-65	10-22-65	479	26.7	11.1	10.0	10.5	38.4	35.4	37.2	33.8	32.8	33.2	1/2	1.569
A-5	10-31-65	11-16-65	1046	26.8	11.3	10.2	10.8	40.2	34.8	37.6	35.6	33.4	34.2	min.	1.562
A-6	11- 2-65	11-16-65	48	26.0	11.0	10.0	10.4	37.8	34.2	36.4	36.4	33.4	35.5	min.	1.568
Current machine average				26.6			10.6			37.5			34.7		1.561
Cumulative machine average				26.5			10.3			37.7			34.0		
Machine factor, %				100.2			103.0			99.7			102.1		
Machine index, %				98.3			103.2			105.8			107.8		

TABLE III

SUMMARY OF TEST RESULTS FOR MACHINE B
October and November, 1965

(Type of medium: semichemical)

B-1	9- 2-65	10-11-65	73	26.9	10.4	10.0	10.2	33.6	31.2	32.2	29.8	27.8	28.8	min.	1.546
B-2	9- 8-65	10-11-65	74	27.6	11.0	10.5	10.8	35.4	31.8	33.2	29.6	27.6	28.8	min.	1.553
B-3	9-16-65	10-11-65	75	27.4	10.8	10.2	10.6	35.4	31.8	33.1	30.0	27.0	28.5	min.	1.560
B-4	9-25-65	10-11-65	76	27.1	10.8	10.2	10.4	34.2	31.2	32.4	29.8	28.4	29.0	1/2	1.561
B-5	10- 7-65	11- 9-65	77	26.6	10.8	10.1	10.4	30.6	30.0	30.2	28.4	26.2	27.5	min.	1.553
B-6	10-14-65	11- 9-65	78	26.7	10.3	10.0	10.2	32.4	28.2	30.5	29.0	26.0	27.6	min.	1.554
B-7	10-21-65	11- 9-65	79	26.0	10.7	10.0	10.2	30.6	28.8	30.0	27.6	25.4	26.3	min.	1.558
B-8	10-29-65	11- 9-65	80	26.4	10.9	10.2	10.8	31.8	28.8	30.2	28.0	25.8	27.4	1/2	1.560
Current machine average				26.8			10.4			31.5			28.0		1.556
Cumulative machine average				26.8			10.1			33.1			30.8		
Machine factor, %				100.0			103.8			95.0			90.8		
Machine index, %				99.4			101.5			88.7			86.8		

[a] Maximum tension at 600 f.p.m.
[b] 600 f.p.m., minimum tension.
[c] Maximum speed at which this roll could be corrugated with minimum tension was 475 f.p.m.

TABLE IV

SUMMARY OF TEST RESULTS FOR MACHINE C
October and November, 1965

(Type of Medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq.ft.	Caliper, pt. Max.	Caliper, pt. Min.	Caliper, pt. Av.	Concora Flat Crush, p.s.i. Max.	Concora Flat Crush, p.s.i. Min.	Concora Flat Crush, p.s.i. Av.	Single-Face Flat Crush, p.s.i. Max.	Single-Face Flat Crush, p.s.i. Min.	Single-Face Flat Crush, p.s.i. Av.	Runnability, lb./in.[a]	Runnability, draw factor[b]
C-1	9-26-65	10- 1-65	183	26.6	9.8	9.2	9.5	39.6	36.6	37.6	34.6	31.8	32.9	1-1/2	1.573
C-2	10- 4-65	10-11-65	184	26.1	10.0	9.0	9.5	41.4	33.6	36.2	35.4	31.8	33.0	1-1/2	1.568
C-3	10- 5-65	10- 8-65	185	33.3	10.7	9.4	10.2	36.0	31.2	33.5	28.4	27.0	27.6	1-1/2	1.577
C-4	10-18-65	10-25-65	186	26.8	11.2	10.2	10.7	33.6	32.4	32.9	31.6	30.4	31.1	1-1/2	1.568
C-5	10-24-65	10-29-65	187	26.6	10.9	10.0	10.5	36.0	30.6	33.2	28.4	28.2	28.4	1/2	1.566
C-6	10-30-65	11- 3-65	188	26.8	10.9	9.0	10.2	36.0	31.8	34.1	32.8	28.6	30.8	1	1.567
C-7	11- 7-65	11-10-65	189	26.2	10.8	9.9	10.2	37.2	32.4	34.9	31.0	30.0	30.4	1-1/2	1.576
C-8	11-18-65	11-24-65	190	26.5	10.1	9.7	10.0	35.4	29.4	32.9	31.4	30.4	30.9	1-1/2	1.572
C-9	11-19-65	11-26-65	191	26.0	10.0	9.0	9.5	33.6	29.4	31.7	29.2	26.4	27.7	1-1/2	1.574
Current machine average				27.2			10.0			34.1			30.3		1.571
Cumulative machine average				26.4			9.9			33.7			30.3		
Machine factor, %				103.2			101.6			101.3			100.0		
Machine index, %				100.8			97.3			96.1			94.1		

TABLE V

SUMMARY OF TEST RESULTS FOR MACHINE D
October and November, 1965

(Type of medium: semichemical)

D-1	10-10-65	11- 4-65	--	26.4	10.2	9.8	10.0	39.6	36.6	38.3	34.8	31.8	33.9	1	1.565
D-2	10-11-65	11- 4-65	--	26.9	10.2	10.1	10.2	40.8	39.0	40.1	35.6	34.0	34.7	1	1.562
D-3	10-12-65	11- 4-65	--	27.1	10.9	10.3	10.7	39.6	37.2	37.9	34.2	33.0	33.7	min.	1.563
D-4	10-18-65	11- 4-65	--	26.7	10.3	10.0	10.2	40.2	34.8	37.9	35.6	33.8	34.6	1	1.560
D-5	11-19-65	11-26-65	--	26.1	9.7	9.1	9.4	40.2	36.0	38.6	34.2	32.4	33.4	1-1/2	1.574
D-6	11-22-65	11-26-65	--	26.7	9.9	9.2	9.5	40.2	36.6	38.4	33.4	32.2	32.8	1-1/2	1.573
Current machine average				26.7			10.0			38.5			33.8		1.566
Cumulative machine average				26.7			10.2			36.9			33.7		
Machine factor, %				100.0			97.7			104.5			100.4		
Machine index, %				98.7			97.0			108.6			105.0		

[a] Maximum tension at 600 f.p.m.

[b] 600 f.p.m., minimum tension.

TABLE VI

SUMMARY OF TEST RESULTS FOR MACHINE E
October and November, 1965

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq.ft.	Caliper, pt. Max.	Caliper, pt. Min.	Caliper, pt. Av.	Concora Flat Crush, p.s.i. Max.	Concora Flat Crush, p.s.i. Min.	Concora Flat Crush, p.s.i. Av.	Single-Face Flat Crush, p.s.i. Max.	Single-Face Flat Crush, p.s.i. Min.	Single-Face Flat Crush, p.s.i. Av.	Runnability, lb./in.[a]	Runnability, draw factor[b]
E-1	11- 3-65	11-12-65	223	26.5	12.0	11.0	11.6	34.2	28.2	31.1	29.8	25.6	28.1	1-1/2	1.568
E-2	11- 3-65	11-12-65	224	25.7	12.1	11.3	11.9	31.8	27.0	29.0	27.6	25.6	26.6	1-1/2	1.564
E-3	11-15-65	11-23-65	231	25.0	11.4	10.8	11.1	34.2	26.4	30.7	31.4	25.6	28.1	1-1/2	1.566
E-4	11-15-65	11-23-65	232	23.5	11.0	10.6	10.9	29.4	27.0	27.8	26.0	22.2	23.8	1-1/2	1.567
Current machine average				25.2			11.4			29.7			26.7		1.566
Cumulative machine average				26.4			11.6			34.3			31.8		
Machine factor, %				95.4			97.9			86.5			83.9		
Machine index, %				93.2			110.5			83.6			82.7		

TABLE VII

SUMMARY OF TEST RESULTS FOR MACHINE F
October and November, 1965

(Type of medium: semichemical)

F-1	10- 1-65	11- 2-65	J-1	25.7	10.2	8.9	9.4	30.0	28.2	28.9	28.4	26.8	27.8	1-1/2	1.574
F-2	10- 1-65	11- 2-65	J-2	26.9	10.4	9.2	9.8	28.8	25.8	27.2	30.2	28.8	29.5	1-1/2	1.570
F-3	10-17-65	11- 2-65	J-3	25.8	9.9	8.9	9.6	34.2	28.8	31.3	30.0	27.2	28.5	1	1.577
F-4	10-18-65	11- 2-65	J-4	26.7	10.0	9.1	9.7	32.4	27.6	30.2	32.8	29.0	31.4	1/2	1.563
Current machine average				26.3			9.6			29.4			29.3		1.571
Cumulative machine average				26.8			9.6			32.9			30.8		
Machine factor, %				98.1			100.0			89.4			95.3		
Machine index, %				97.2			93.6			82.9			91.0		

[a] Maximum tension at 600 f.p.m.

[b] 600 f.p.m., minimum tension.

TABLE VIII

SUMMARY OF TEST RESULTS FOR MACHINE G
October and November, 1965

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq.ft.	Caliper, pt. Max.	Min.	Av.	Concora Flat Crush, p.s.i. Max.	Min.	Av.	Single-Face Flat Crush, p.s.i. Max.	Min.	Av.	Runnability, lb./in.[a]	draw factor[b]
G-1	9-20-65	9-30-65	656	26.8	9.9	8.8	9.1	39.0	37.2	38.2	33.4	31.8	32.6	1-1/2	1.579
G-2	10- 1-65	10-13-65	657	26.5	9.7	8.9	9.2	39.0	35.4	37.0	32.8	30.4	32.1	1-1/2	1.575
G-3	10- 4-65	10-13-65	658	27.6	9.3	8.8	9.0	39.6	31.2	35.6	31.0	29.8	30.5	1-1/2	1.578
G-4	10-12-65	10-25-65	659	26.5	9.7	8.9	9.2	42.0	33.6	37.6	36.0	34.8	35.2	min.	1.562
G-5	10-19-65	10-27-65	660	27.4	9.4	8.5	9.0	38.4	34.8	35.9	34.8	29.4	32.1	min.	1.544
G-6	11- 1-65	11-10-65	661	26.5	9.2	8.2	8.8	37.8	34.8	36.6	34.4	31.6	33.0	1	1.571
G-7	11- 7-65	11-16-65	662	26.1	9.0	8.3	8.6	36.0	32.4	34.9	33.0	30.6	32.0	1-1/2	1.573
G-8	11-13-65	11-22-65	663	26.4	9.5	8.8	9.2	37.8	34.2	35.9	33.2	29.0	30.8	min.	1.557
Current machine average				26.7			9.0			36.4			32.3		1.567
Cumulative machine average				26.7			9.1			38.0			33.8		
Machine factor, %				100.0			98.6			95.9			95.4		
Machine index, %				99.0			87.5			102.7			100.2		

TABLE IX

SUMMARY OF TEST RESULTS FOR MACHINE H
October and November, 1965

(Type of medium: semichemical)

H-1	9-21-65	10-28-65	3779	26.8	11.0	10.7	10.9	40.2	32.4	36.1	32.0	28.6	30.2	min.	1.557
H-2	9-27-65	10-28-65	5537	27.5	11.5	10.7	11.1	37.8	33.6	35.5	34.6	30.6	32.0	min.	1.558
H-3	10- 3-65	10-28-65	490	26.6	11.0	10.6	10.9	37.2	28.8	32.6	34.0	32.0	32.6	min.	1.557
H-4	10-12-65	10-28-65	2239	27.1	11.1	10.7	10.9	35.4	31.2	33.5	33.8	26.6	31.1	min.	1.557
Current machine average				27.0			10.9			34.4			31.5		1.557
Cumulative machine average				26.8			10.7			34.8			31.6		
Machine factor, %				100.5			102.4			99.0			99.6		
Machine index, %				100.0			106.1			97.1			97.8		

[a] Maximum tension at 600 f.p.m.

[b] 600 f.p.m., minimum tension.

TABLE X

SUMMARY OF TEST RESULTS FOR MACHINE I
October and November, 1965

(Type of medium: kraft)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq.ft.	Caliper, pt. Max.	Caliper, pt. Min.	Caliper, pt. Av.	Concora Flat Crush, p.s.i. Max.	Concora Flat Crush, p.s.i. Min.	Concora Flat Crush, p.s.i. Av.	Single-Face Flat Crush, p.s.i. Max.	Single-Face Flat Crush, p.s.i. Min.	Single-Face Flat Crush, p.s.i. Av.	Runnability, lb./in.[a]	Runnability, draw factor[b]
I-1	10-26-65	11-11-65	15	27.3	9.3	8.8	9.1	31.2	27.0	29.9	29.6	26.2	27.1	min.	1.556
I-2	10-26-65	11-11-65	16	27.3	9.3	8.9	9.1	31.8	30.6	31.4	28.8	26.6	27.8	min.	1.562
I-3	10-26-65	11-11-65	17	27.5	9.3	9.0	9.1	33.6	28.8	31.6	31.4	27.4	29.4	min.	1.566
I-4	10-26-65	11-11-65	18	27.7	9.4	9.0	9.1	33.0	27.0	30.0	30.0	26.0	28.3	min.	1.568
Current machine average				27.4			9.1			30.7			28.1		1.563
Cumulative machine average				27.6			9.3			35.2			33.2		
Machine factor, %				99.2			97.9			87.4			84.9		
Machine index, %				101.5			88.5			86.6			87.3		

TABLE XI

SUMMARY OF TEST RESULTS FOR MACHINE J
October and November, 1965

(Type of medium: semichemical)

J-1	9-26-65	10- 1-65	183	26.6	10.5	9.3	9.8	38.4	34.8	36.6	32.8	31.0	32.0	1-1/2	1.573
J-2	10- 5-65	10-11-65	184	27.9	10.9	9.0	10.1	40.2	37.8	39.1	36.0	33.6	34.8	1-1/2	1.573
J-3	10-13-65	10-20-65	185	25.9	10.6	10.0	10.2	31.8	30.6	31.3	29.4	27.6	28.3	1	1.571
J-4	10-19-65	10-25-65	186	26.5	10.8	10.0	10.4	34.2	31.2	32.5	29.4	26.6	28.1	1-1/2	1.570
J-5	10-24-65	10-29-65	187	26.0	10.8	10.0	10.3	34.2	28.8	31.2	29.6	27.4	28.4	1	1.569
J-6	10-30-65	11- 3-65	188	26.9	10.8	10.0	10.4	34.8	33.0	34.1	30.8	28.6	29.7	1/2	1.567
J-7	11- 6-65	11-10-65	189	26.2	10.3	10.0	10.1	33.0	28.8	31.1	27.0	25.8	26.2	1-1/2	1.572
J-8	11-18-65	11-24-65	190	25.8	10.3	9.9	10.1	30.6	27.0	28.9	25.4	24.4	25.0	1-1/2	1.576
J-9	11-21-65	11-26-65	191	26.6	10.6	10.0	10.2	36.6	31.2	33.5	28.2	27.4	27.7	1-1/2	1.575
Current machine average				26.5			10.2			33.1			28.9		1.572
Cumulative machine average				26.5			9.8			33.0			29.7		
Machine factor, %				100.0			104.4			100.5			97.3		
Machine index, %				98.0			98.9			93.4			89.7		

[a] Maximum tension at 600 f.p.m.

[b] 600 f.p.m., minimum tension.

TABLE XII

SUMMARY OF TEST RESULTS FOR MACHINE K
October and November, 1965

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq. ft.	Caliper, pt. Max.	Caliper, pt. Min.	Caliper, pt. Av.	Concora Flat Crush, p.s.i. Max.	Concora Flat Crush, p.s.i. Min.	Concora Flat Crush, p.s.i. Av.	Single-Face Flat Crush, p.s.i. Max.	Single-Face Flat Crush, p.s.i. Min.	Single-Face Flat Crush, p.s.i. Av.	Runnability, lb./in.[a]	Runnability, draw factor[b]
K-1	10-10-65	11- 4-65	--	26.5	10.6	10.1	10.4	39.0	34.2	36.6	34.6	32.6	33.4	min.	1.559
K-2	10-11-65	11- 4-65	--	26.8	10.7	10.0	10.4	40.2	36.6	38.3	35.4	31.0	33.9	min.	1.553
K-3	10-17-65	11- 4-65	--	26.0	11.0	10.2	10.4	36.6	34.2	35.6	36.0	32.8	34.4	min.	1.556
K-4	10-18-65	11- 4-65	--	26.5	10.9	10.0	10.6	40.2	34.2	37.2	35.2	32.4	33.6	min.	1.552
K-5	11-11-65	11-23-65	--	26.0	10.9	10.3	10.6	34.2	31.2	32.8	32.0	30.0	30.6	1	1.562
K-6	11-18-65	11-23-65	--	25.7	10.7	10.0	10.4	35.4	31.2	33.1	32.0	29.8	30.7	1	1.565
K-7	11-19-65	11-26-65	--	27.6	11.6	11.0	11.4	40.2	34.2	36.7	32.6	30.8	31.6	1-1/2	1.571
K-8	11-22-65	11-26-65	--	27.3	10.9	10.2	10.6	39.6	37.8	38.9	34.6	33.6	33.9	1	1.563
Current machine average				26.6			10.6			36.2			32.8		1.560
Cumulative machine average				26.6			10.3			36.5			32.9		
Machine factor, %				100.0			102.9			99.1			99.5		
Machine index, %				98.3			103.0			101.9			101.7		

TABLE XIII

SUMMARY OF TEST RESULTS FOR MACHINE L
October and November, 1965

(Type of medium: semichemical)

L-1	9-23-65	10-11-65	1420	27.2	10.3	9.8	10.0	36.6	31.2	34.4	30.2	29.0	29.6	note[c]	1.530
L-2	9-23-65	10-11-65	1421	27.0	10.9	10.0	10.6	37.2	33.0	34.8	34.0	31.0	32.2	note[d]	1.548
L-3	10-11-65	10-21-65	1428	26.8	11.5	10.9	11.1	35.4	27.6	32.6	32.6	29.6	30.8	1/2	1.551
L-4	10-11-65	10-21-65	1429	27.8	11.2	10.9	11.0	34.8	33.0	34.3	33.4	28.8	31.3	1/2	1.560
L-5	10-11-65	10-21-65	1436	27.3	11.5	10.9	11.0	34.2	31.2	32.6	31.4	28.6	29.7	min.	1.558
L-6	10-11-65	10-21-65	1437	26.1	10.7	10.0	10.2	31.2	28.8	30.6	31.4	28.4	29.6	note[c]	1.541
L-7	10-28-65	11-15-65	1444	25.7	10.9	10.0	10.4	31.2	27.0	29.5	30.0	27.8	28.6	note[d]	1.552
L-8	10-28-65	11-15-65	1445	26.7	10.7	10.0	10.3	34.8	29.4	32.0	28.6	26.6	27.5	note[d]	1.549
L-9	11-15-65	11-23-65	1452	26.4	10.8	10.3	10.6	32.4	28.8	30.4	29.6	27.8	29.0	1/2	1.558
L-10	11-15-65	11-23-65	1453	27.4	10.7	9.6	10.2	35.4	33.0	33.7	31.4	29.4	30.4	1-1/2	1.561
Current machine average				26.8			10.5			32.5			29.9		1.551
Cumulative machine average				28.1			10.8			34.8			31.6		
Machine factor, %				95.4			98.1			93.3			94.6		
Machine index, %				99.3			102.5			91.6			92.7		

[a] Maximum tension at 600 f.p.m.
[b] 600 f.p.m., minimum tension.
[c] Maximum speed at which this roll could be corrugated with minimum tension was 450 f.p.m.
[d] Maximum speed at which this roll could be corrugated with minimum tension was 525 f.p.m.
[e] Maximum speed at which this roll could be corrugated with minimum tension was 475 f.p.m.

TABLI XIV

SUMMARY OF TEST RESULTS FOR MACHINE M
October and November, 1965

(Type of medium: bogus)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq. ft.	Caliper, pt.			Concora Flat Crush, p.s.i.			Single-Face Flat Crush, p.s.i.			Runnability,	
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	lb./in.[a]	draw factor[b]
M-1	9- 1-65	10-25-65	66	28.1	12.8	11.5	12.1	33.6	30.0	31.8	32.0	29.8	30.8	1-1/2	1.562
M-2	9- 4-65	10-25-65	67	30.1	13.0	11.0	12.0	36.0	34.2	35.0	33.8	30.8	32.2	1-1/2	1.567
M-3	9-12-65	10-25-65	68	30.0	14.3	12.3	12.9	37.2	33.0	34.4	34.8	33.0	33.6	1-1/2	1.560
M-4	9-13-65	10-25-65	69	30.0	13.2	11.8	12.4	34.8	30.6	32.5	31.2	28.8	29.9	1-1/2	1.555
M-5	9-26-65	10-25-65	70	26.6	11.2	9.9	10.8	34.2	30.0	32.0	31.4	30.4	31.2	1/2	1.557
Current machine average				29.0			12.0			33.2			31.6		1.560
Cumulative machine average				28.1			11.0			33.4			29.7		
Machine factor, %				103.1			109.0			99.2			106.3		
Machine index, %				107.3			116.8			93.5			97.9		

TABLE XV

SUMMARY OF TEST RESULTS FOR MACHINE N
October and November, 1965

(Type of medium: semichemical)

N-1	9-14-65	10-14-65	26	27.1	11.4	10.2	10.4	36.0	33.0	34.3	34.0	30.6	31.9	1-1/2	1.570
N-2	9-15-65	10-14-65	27	26.6	10.7	9.4	10.2	36.6	33.0	34.8	32.2	30.6	31.4	1	1.566
N-3	9-20-65	10-14-65	28	27.0	10.5	10.0	10.2	35.4	31.8	33.5	31.0	29.0	30.2	1	1.567
N-4	9-24-65	10-14-65	29	25.8	10.8	10.0	10.4	32.4	28.2	31.0	28.6	26.4	27.6	1	1.565
N-5	10- 9-65	11-16-65	30	26.5	11.0	10.0	10.6	37.2	33.0	35.4	31.6	26.2	29.8	1/2	1.563
N-6	10-11-65	11-16-65	31	26.7	12.3	10.3	11.1	36.6	31.8	34.6	33.0	29.8	31.1	1/2	1.560
N-7	10-16-65	11-16-65	32	26.7	11.5	10.5	11.0	35.4	33.0	34.3	32.8	29.6	31.3	1	1.563
N-8	10-24-65	11-16-65	33	25.8	11.4	10.2	10.8	32.4	27.6	30.5	27.4	24.8	26.4	min.	1.562
Current machine average				26.5			10.6			33.5			30.0		1.564
Cumulative machine average				26.9			10.7			35.1			31.2		
Machine factor, %				98.5			99.3			95.5			96.2		
Machine index, %				98.2			102.8			94.5			93.0		

[a] Maximum tension at 600 f.p.m.

[b] 600 f.p.m., minimum tension.

TABLE XVI

SUMMARY OF TEST RESULTS FOR MACHINE O
October and November, 1965

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq. ft.	Caliper, pt. Max.	Caliper, pt. Min.	Caliper, pt. Av.	Concora Flat Crush, p.s.i. Max.	Concora Flat Crush, p.s.i. Min.	Concora Flat Crush, p.s.i. Av.	Single-Face Flat Crush, p.s.i. Max.	Single-Face Flat Crush, p.s.i. Min.	Single-Face Flat Crush, p.s.i. Av.	Runnability, lb./in.[a]	draw factor[b]
O-1	9-24-65	11- 4-65	--	27.8	12.3	10.5	11.0	38.4	37.2	37.6	34.8	31.4	32.8	note[c]	1.545
O-2	10-10-65	11- 4-65	--	27.1	11.4	10.8	11.1	40.8	34.2	36.2	33.4	30.6	31.6	min.[c]	1.544
O-3	10-20-65	11- 4-65	--	38.0	12.1	11.3	11.7	36.0	33.0	34.7	30.6	28.8	29.9	note[c]	1.544
O-4	10-20-65	11- 4-65	--	27.1	12.2	11.0	11.7	36.6	32.4	35.0	33.4	31.4	32.4	min.	1.541
O-5	11-22-65	11-26-65	--	26.6	10.9	10.0	10.6	35.4	34.2	34.7	30.8	28.8	29.8	1	1.565
Current machine average				27.3			11.2			35.6			31.3		1.548
Cumulative machine average				26.9			10.5			35.7			31.8		
Machine factor, %				101.7			106.4			99.9			98.5		
Machine index, %				101.2			109.1			100.4			97.2		

TABLE XVII

SUMMARY OF TEST RESULTS FOR MACHINE P
October and November, 1965

(Type of medium: semichemical)

P-1	9-16-65	10- 8-65	521	28.1	11.7	11.0	11.3	39.6	35.4	37.4	35.8	33.6	34.8	1	1.554
P-2	9-24-65	10- 8-65	522	27.8	11.7	11.0	11.3	39.6	36.0	37.4	36.2	32.8	34.8	min.	1.550
P-3	9-27-65	10- 8-65	523	27.9	11.8	11.3	11.6	43.2	37.2	39.1	37.8	35.8	36.4	min.	1.549
P-4	10- 4-65	11- 3-65	524	27.4	11.6	11.0	11.2	40.2	34.8	37.9	36.0	33.6	34.6	min.	1.559
P-5	10-15-65	11-10-65	525	29.0	11.2	10.7	11.0	40.2	34.8	37.6	33.8	32.2	33.2	1/2	1.569
P-6	10-21-65	11-10-65	526	28.6	11.2	10.8	11.0	36.6	31.8	35.3	32.6	30.2	31.2	1/2	1.566
P-7	10-27-65	11-10-65	527	28.4	11.1	10.6	10.8	37.8	34.2	36.6	36.0	33.4	34.1	1/2	1.571
P-8	11- 2-65	11-10-65	528	28.7	10.9	10.0	10.5	39.0	36.0	37.8	34.0	32.8	33.4	1/2	1.572
Current machine average				28.2			11.1			37.4			34.1		1.561
Cumulative machine average				27.4			10.7			36.2			33.6		
Machine factor, %				102.8			103.9			103.2			101.5		
Machine index, %				104.5			107.7			105.4			105.7		

[a] Maximum tension at 600 f.p.m.

[b] 600 f.p.m., minimum tension.

[c] Maximum speed at which these rolls could be corrugated with minimum tension was 525 f.p.m.

TABLE XVIII

SUMMARY OF TEST RESULTS FOR MACHINE Q
October and November, 1965

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq. ft.	Caliper, pt. Max.	Caliper, pt. Min.	Caliper, pt. Av.	Concora Flat Crush, p.s.i. Max.	Concora Flat Crush, p.s.i. Min.	Concora Flat Crush, p.s.i. Av.	Single-Face Flat Crush, p.s.i. Max.	Single-Face Flat Crush, p.s.i. Min.	Single-Face Flat Crush, p.s.i. Av.	Runnability, lb./in.[a]	Runnability, draw factor[b]
Q-1	9-23-65	10- 8-65	38	26.6	10.3	9.5	9.9	36.0	32.4	33.7	30.6	28.6	29.5	1/2	1.565
Q-2	9-29-65	10-14-65	39	28.3	10.9	10.1	10.5	39.0	31.2	34.2	33.4	29.4	31.5	1	1.565
Q-3	10- 7-65	10-18-65	40	28.4	11.0	10.2	10.6	33.0	28.8	31.0	30.4	27.8	29.3	1/2	1.566
Q-4	10-12-65	10-22-65	41	27.4	9.8	8.8	9.4	36.0	32.4	34.3	35.0	30.6	32.0	1	1.565
Q-5	10-21-65	11- 4-65	42	27.0	10.6	9.5	10.1	39.0	32.4	35.0	30.6	28.4	29.4	min.[c]	1.557
Q-6	10-28-65	11-10-65	43	27.3	10.3	9.8	10.1	34.2	30.0	31.8	30.2	24.0	26.6	note[c]	1.561
Q-7	11- 4-65	11-10-65	44	27.1	10.0	9.3	9.7	36.0	31.2	33.6	32.0	27.8	29.2	1	1.566
Q-8	11-12-65	11-26-65	45	26.9	10.8	10.0	10.4	34.2	28.2	31.8	29.6	26.4	27.9	min.	1.561
Current machine average				27.4			10.1			33.2			29.4		1.563
Cumulative machine average				27.4			10.3			33.8			30.4		
Machine factor, %				100.0			97.6			98.2			96.8		
Machine index, %				101.3			98.0			93.5			91.4		

TABLE XIX

SUMMARY OF TEST RESULTS FOR MACHINE R
October and November, 1965

(Type of medium: semichemical)

R-1	8- 1-65	10- 4-65	609	27.6	10.9	10.4	10.7	42.0	39.0	40.2	37.8	36.2	36.9	1/2	1.555
R-2	8-10-65	10-19-65	610	27.6	10.7	10.0	10.3	45.0	38.4	40.7	39.0	36.4	37.9	min.	1.558
R-3	9-14-65	10-19-65	611	27.7	11.0	10.0	10.4	43.8	39.6	42.4	39.2	36.8	37.7	min.	1.554
R-4	10-16-65	11-15-65	612	26.9	10.3	9.8	10.0	42.0	39.0	40.7	38.2	35.4	36.8	min.	1.563
R-5	10-16-65	11-15-65	613	26.6	10.3	9.8	10.1	41.4	39.0	40.3	37.2	34.8	36.0	1/2	1.561
Current machine average				27.3			10.3			40.8			37.1		1.558
Cumulative machine average				27.8			10.5			40.6			36.8		
Machine factor, %				98.3			98.4			100.6			100.7		
Machine index, %				101.0			100.0			115.1			115.0		

[a] Maximum tension at 600 f.p.m.

[b] 600 f.p.m., minimum tension.

[c] Maximum speed at which this roll could be corrugated with minimum tension was 400 f.p.m.

TABLE XX

SUMMARY OF TEST RESULTS FOR MACHINE S
October and November, 1965

(Type of medium: bogus)

de	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq. ft.	Caliper, pt. Max.	Caliper, pt. Min.	Caliper, pt. Av.	Concora Flat Crush, p.s.i. Max.	Concora Flat Crush, p.s.i. Min.	Concora Flat Crush, p.s.i. Av.	Single-Face Flat Crush, p.s.i. Max.	Single-Face Flat Crush, p.s.i. Min.	Single-Face Flat Crush, p.s.i. Av.	Runnability, lb./in.[a]	draw factor[b]
1	9-13-65	10-11-65	192	25.4	10.0	8.9	9.2	36.6	31.2	34.8	30.4	29.4	30.0	1-1/2	1.575
2	9-20-65	10-11-65	193	26.8	10.1	9.3	9.9	36.6	31.8	34.1	32.4	28.0	30.2	1-1/2	1.573
3	9-22-65	10-11-65	194	27.6	10.8	9.8	10.1	36.6	34.2	35.2	33.6	32.2	33.2	1-1/2	1.573
4	9-27-65	10-11-65	195	26.0	10.0	9.0	9.7	34.8	29.4	31.9	30.6	28.2	29.9	1-1/2	1.573
5	10- 8-65	11- 9-65	196	27.7	10.3	9.1	9.9	43.2	34.8	37.7	36.6	32.0	34.1	1-1/2	1.575
6	10-12-65	11- 9-65	197	28.1	10.8	9.8	10.2	32.4	27.0	30.7	29.0	27.2	28.2	1-1/2	1.570
7	10-14-65	11- 9-65	198	26.4	10.0	9.0	9.5	37.2	33.0	34.6	31.4	29.2	30.2	1-1/2	1.577
8	10-18-65	11- 9-65	199	26.1	10.1	9.1	9.8	34.2	28.8	32.0	28.6	27.2	27.8	1-1/2	1.576
rrent machine average				26.8			9.8			33.9			30.4		1.574
mulative machine average				27.0			10.0			34.3			31.2		
chine factor, %				99.2			97.7			98.8			97.6		
chine index, %				99.1			95.2			95.4			94.5		

TABLE XXI

SUMMARY OF TEST RESULTS FOR MACHINE T
October and November, 1965

(Type of medium: semichemical)

1	9-15-65	10- 5-65	424	26.3	11.0	10.2	10.5	41.4	35.4	38.5	35.6	33.8	34.8	1-1/2	1.565
2	9-20-65	10- 5-65	425	26.5	11.4	9.9	10.7	40.2	35.4	37.8	36.0	34.6	35.1	1-1/2	1.565
3	9-20-65	10- 5-65	426	26.1	11.0	9.7	10.4	40.2	37.2	38.2	35.0	33.4	34.0	1-1/2	1.565
4	9-27-65	10- 8-65	427	26.8	11.5	9.5	10.3	41.1	36.0	38.4	36.4	34.0	35.2	1-1/2	1.557
5	10- 5-65	10-22-65	428	26.8	11.8	10.1	11.1	38.4	34.2	35.6	36.6	31.0	34.1	1	1.560
6	10-15-65	10-22-65	429	26.8	11.0	9.0	10.0	40.2	37.8	39.1	38.0	36.0	37.5	1-1/2	1.565
7	10-18-65	10-27-65	430	26.5	11.0	10.0	10.5	44.4	34.8	38.3	36.8	36.0	36.4	1/2	1.560
8	11- 4-65	11-17-65	431	27.2	11.0	9.0	10.1	37.8	34.2	36.4	35.8	33.6	34.7	1/2	1.555
9	11- 9-65	11-26-65	432	26.8	11.1	10.1	10.7	40.8	37.2	38.8	35.8	33.2	34.1	min.	1.556
10	11-15-65	11-26-65	433	26.8	10.9	10.0	10.3	39.6	36.0	38.2	34.6	33.2	33.6	1	1.559
rrent machine average				26.7			10.5			37.9			34.9		1.561
mulative machine average				26.6			10.3			38.7			35.7		
chine factor, %				100.4			101.5			97.9			98.0		
chine index, %				98.7			101.6			106.9			108.4		

aximum tension at 600 f.p.m.
00 f.p.m., minimum tension.

TABLE XXII

SUMMARY OF TEST RESULTS FOR MACHINE U
October and November, 1965

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq. ft.	Caliper, pt. Max.	Caliper, pt. Min.	Caliper, pt. Av.	Concora Flat Crush, p.s.i. Max.	Concora Flat Crush, p.s.i. Min.	Concora Flat Crush, p.s.i. Av.	Single-Face Flat Crush, p.s.i. Max.	Single-Face Flat Crush, p.s.i. Min.	Single-Face Flat Crush, p.s.i. Av.	Runnability, lb./in.[a]	Runnability, draw factor[b]
U-1	9-19-65	9-29-65	193	26.5	11.1	10.5	10.9	37.8	31.2	34.4	31.0	27.8	29.6	1-1/2	1.576
U-2	9-19-65	9-29-65	194	26.9	11.1	10.5	10.9	36.6	31.8	34.6	30.6	29.2	29.9	1-1/2	1.572
U-3	10- 1-65	10-13-65	201	27.3	11.0	10.5	10.8	40.8	34.2	37.2	32.6	29.8	31.2	1-1/2	1.572
U-4	10- 1-65	10-13-65	202	27.4	11.0	10.3	10.7	37.2	33.6	35.2	32.4	30.0	31.7	1-1/2	1.571
U-5	11- 8-65	11-16-65	209	25.3	10.5	10.0	10.2	37.2	32.4	34.3	31.0	28.6	29.6	1-1/2	1.572
U-6	11- 8-65	11-16-65	210	25.4	10.6	9.8	10.3	34.8	30.6	33.2	29.0	27.0	28.2	1-1/2	1.569
U-7	11- 8-65	11-16-65	217	25.8	10.9	10.0	10.3	34.8	31.8	33.0	31.6	28.0	30.1	1-1/2	1.569
U-8	11- 8-65	11-16-65	218	26.0	10.3	9.9	10.1	39.0	31.8	35.0	31.6	28.6	29.6	1-1/2	1.569
Current machine average				26.3			10.5			34.6			30.0		1.571
Cumulative machine average				27.0			10.6			33.8			30.1		
Machine factor, %				97.5			99.3			102.3			99.7		
Machine index, %				97.4			102.3			97.6			93.1		

TABLE XXIII

SUMMARY OF TEST RESULTS FOR MACHINE V
October and November, 1965

(Type of medium: semichemical)

V-1	9-22-65	10- 5-65	744	26.8	11.0	10.1	10.7	45.0	40.2	42.0	38.2	36.0	36.9	1/2	1.560
V-2	9-27-65	10- 8-65	745	26.7	10.7	9.8	10.3	42.6	38.4	40.3	37.6	35.4	36.5	1-1/2	1.559
V-3	10-15-65	10-22-65	746	27.4	10.6	9.5	9.9	46.8	38.4	42.6	41.8	40.8	41.4	1/2	1.563
V-4	10-18-65	10-27-65	747	26.6	10.8	10.0	10.5	42.0	38.4	40.4	38.0	36.4	37.4	min.	1.547
V-5	10-20-65	11-17-65	748	27.1	14.4	10.6	12.3	43.8	39.6	41.4	38.4	36.8	37.6	min.	1.545
V-6	10-26-65	11-17-65	749	26.9	11.0	10.1	10.5	42.6	38.4	39.5	35.6	34.8	35.4	1/2	1.543
Current machine average				26.9			10.7			41.0			37.5		1.553
Cumulative machine average				26.5			10.3			39.6			36.1		
Machine factor, %				101.5			104.0			103.8			103.8		
Machine index, %				99.7			104.0			115.7			116.4		

[a] Maximum tension at 600 f.p.m.

[b] 600 f.p.m., minimum tension.

TABLE XXIV

SUMMARY OF TEST RESULTS FOR MACHINE W
October and November, 1965

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq. ft.	Caliper, pt. Max.	Caliper, pt. Min.	Caliper, pt. Av.	Concora Flat Crush, p.s.i. Max.	Concora Flat Crush, p.s.i. Min.	Concora Flat Crush, p.s.i. Av.	Single-Face Flat Crush, p.s.i. Max.	Single-Face Flat Crush, p.s.i. Min.	Single-Face Flat Crush, p.s.i. Av.	Runnability, lb./in.[a]	Runnability, draw factor[b]
W-1	9-27-65	10-11-65	21	27.6	11.5	10.8	11.2	40.2	37.8	39.2	36.6	32.6	35.2	note[c]	1.544
W-2	10-11-65	10-25-65	22	26.7	11.3	10.3	10.8	40.2	32.4	37.3	36.2	34.6	35.4	min.	1.545
W-3	10-17-65	10-27-65	23	27.8	11.5	9.9	10.6	40.2	34.8	37.0	32.0	30.4	31.2	note[d]	1.538
W-4	10-26-65	11-10-65	24	28.4	11.6	10.8	11.1	37.8	32.4	34.3	35.0	32.6	33.6	1/2	1.550
W-5	11- 4-65	11-22-65	25	26.9	11.1	9.8	10.6	39.0	34.2	36.5	35.6	32.6	33.6	1/2	1.554
Current machine average				27.5			10.9			36.9			33.8		1.546
Cumulative machine average				27.0			10.8			36.1			32.6		
Machine factor, %				101.8			100.9			102.0			103.8		
Machine index, %				101.7			105.7			103.9			105.0		

TABLE XXV

SUMMARY OF TEST RESULTS FOR MACHINE X
October and November, 1965

(Type of medium: semichemical)

X-1	11- 4-65	11- 9-65	55	27.7	10.9	10.1	10.6	42.6	39.0	40.8	36.0	34.6	35.4	min.	1.554
X-2	11-12-65	11-23-65	56	26.9	10.4	10.0	10.2	41.4	34.8	38.0	33.4	31.0	32.3	min.[e]	1.560
X-3	11-18-65	11-23-65	57	27.0	10.2	9.0	9.7	38.4	32.4	34.3	----	----	----	note	1.516
Current machine average				27.2			10.2			37.7			33.9		1.543
Cumulative machine average				----			----			----			----		
Machine factor, %				----			----			----			----		
Machine index, %				100.7			98.6			106.3			105.1		

[a] Maximum tension at 600 f.p.m.

[b] 600 f.p.m., minimum tension.

[c] Maximum speed at which this roll could be corrugated with minimum tension was 375 f.p.m.

[d] Maximum speed at which this roll could be corrugated with minimum tension was 500 f.p.m.

[e] Maximum speed at which this roll could be corrugated with minimum tension was less than 100 f.p.m.

TABLE XXVI

SUMMARY OF TEST RESULTS FOR MACHINE Y
October and November, 1965

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq. ft.	Caliper, pt. Max.	Min.	Av.	Concora Flat Crush, p.s.i. Max.	Min.	Av.	Single-Face Flat Crush, p.s.i. Max.	Min.	Av.	Runnability, lb./in.[a]	draw factor[b]
Y-1	9-20-65	10-11-65	102	27.0	10.5	10.0	10.3	35.4	31.2	33.2	32.8	31.6	32.3	1/2	1.568
Y-2	9-20-65	10-11-65	103	26.9	10.9	10.1	10.5	36.6	31.8	33.6	33.4	31.6	32.6	1/2	1.559
Y-3	9-20-65	10-11-65	104	27.7	11.1	10.3	10.7	36.6	33.0	34.6	32.6	31.2	32.0	min.	1.563
Y-4	10- 1-65	10-11-65	105	26.5	10.9	10.1	10.3	34.2	32.4	33.1	32.0	30.2	30.8	min.	1.565
Y-5	10-27-65	11-15-65	106	27.5	10.5	9.9	10.1	33.6	31.2	32.4	33.0	28.2	31.3	1/2	1.565
Y-6	10-27-65	11-15-65	107	26.9	10.4	9.8	10.1	34.8	30.0	33.4	32.6	30.8	31.7	min.	1.564
Y-7	10-27-65	11-15-65	108	27.3	10.6	9.8	10.1	34.8	29.4	32.6	32.8	31.0	31.9	min.	1.562
Y-8	10-27-65	11-15-65	109	27.2	10.7	9.9	10.2	34.2	32.4	33.4	34.2	31.0	32.4	min.	1.558
Current machine average				27.1			10.3			33.3			31.9		1.563
Cumulative machine average				27.0			10.8			34.8			31.7		
Machine factor, %				100.5			95.7			95.7			100.4		
Machine index, %				100.4			100.0			93.8			98.9		

TABLE XXVII

SUMMARY OF TEST RESULTS FOR MACHINE Z
October and November, 1965

(Type of medium: bogus)

Z-1	9-16-65	10-11-65	292	26.0	10.5	9.4	10.1	35.4	31.2	33.5	34.6	30.4	32.9	1-1/2	1.561
Z-2	9-19-65	10-11-65	293	27.7	10.5	9.0	9.8	43.2	39.0	42.0	40.4	38.8	39.6	1-1/2	1.551
Z-3	9-22-65	10-11-65	294	27.7	10.9	9.7	10.4	41.4	38.4	40.0	36.6	33.6	35.1	min.	1.538
Z-4	9-27-65	10-11-65	295	26.4	10.0	9.3	9.9	37.8	31.8	34.8	33.6	31.2	31.8	1/2	1.541
Z-5	10- 8-65	11- 9-65	296	27.5	11.1	10.1	10.6	41.4	39.0	40.0	37.0	32.8	34.5	min.	1.540
Z-6	10-12-65	11- 9-65	297	28.2	10.3	9.2	9.8	39.0	31.8	35.0	33.2	30.8	32.1	1-1/2	1.556
Z-7	10-14-65	11- 9-65	298	28.0	10.2	9.7	10.0	43.2	39.6	40.9	36.2	32.8	34.9	1-1/2	1.553
Z-8	10-18-65	11- 9-65	299	28.1	10.5	9.9	10.1	38.4	36.0	37.3	34.2	31.0	32.8	min.	1.535
Current machine average				27.4			10.1			37.9			34.2		1.547
Cumulative machine average				27.5			9.8			37.2			34.5		
Machine factor, %				99.8			103.4			102.1			99.1		
Machine index, %				101.6			98.1			106.9			106.2		

[a] Maximum tension at 600 f.p.m.

[b] 600 f.p.m., minimum tension.

TABLE XXVIII

SUMMARY OF TEST RESULTS FOR MACHINE AA
October and November, 1965

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq. ft.	Caliper, pt. Max.	Caliper, pt. Min.	Caliper, pt. Av.	Concora Flat Crush, p.s.i. Max.	Concora Flat Crush, p.s.i. Min.	Concora Flat Crush, p.s.i. Av.	Single-Face Flat Crush, p.s.i. Max.	Single-Face Flat Crush, p.s.i. Min.	Single-Face Flat Crush, p.s.i. Av.	Runnability, lb./in.[a]	Runnability, draw factor[b]
AA-1	9-23-65	10-11-65	30	27.1	10.0	9.1	9.6	38.4	34.2	36.6	34.0	31.2	32.6	1/2	1.565
AA-2	10- 2-65	10-14-65	31	26.4	10.7	9.8	10.2	36.6	29.4	32.6	32.8	30.4	31.4	1/2	1.562
AA-3	10- 7-65	10-18-65	32	26.0	10.3	10.0	10.1	33.0	28.2	30.7	29.0	27.6	28.4	1/2	1.566
AA-4	10-12-65	10-22-65	33	28.0	10.7	10.1	10.4	37.8	33.0	36.1	35.4	32.4	34.2	min.[c]	1.568
AA-5	10-21-65	11- 4-65	34	29.1	11.6	11.0	11.2	43.8	38.4	40.1	38.2	36.4	37.2	note[d]	1.553
AA-6	10-28-65	11-10-65	35	27.4	10.1	9.6	9.8	34.8	31.8	33.6	27.6	26.6	27.1	note	1.556
AA-7	11- 4-65	11-10-65	36	25.2	10.0	9.2	9.7	36.0	31.2	33.0	30.6	27.6	28.7	1/2	1.567
AA-8	11-12-65	11-26-65	37	27.7	10.8	10.0	10.4	36.0	30.6	33.7	30.4	26.4	28.9	min.	1.567
Current machine average				27.1			10.2			34.6			31.1		1.563
Cumulative machine average				27.0			10.3			33.7			30.6		
Machine factor, %				100.2			98.4			102.7			101.5		
Machine index, %				100.3			98.9			97.4			96.4		

TABLE XXIX

SUMMARY OF TEST RESULTS FOR MACHINE BB
October and November, 1965

(Type of medium: bogus)

BB-1	11- 3-65	11-22-65	488	27.9	11.0	10.0	10.4	37.8	34.8	36.1	35.6	32.0	33.8	1	1.561
BB-2	11- 6-65	11-22-65	489	27.3	10.9	10.0	10.4	38.4	35.4	37.2	33.0	30.6	31.7	1-1/2	1.570
BB-3	11-10-65	11-22-65	490	27.4	10.5	10.0	10.2	38.4	33.6	35.5	33.0	30.2	31.4	1-1/2	1.569
BB-4	11-17-65	11-22-65	491	28.0	10.9	9.5	10.3	39.0	34.2	36.8	35.0	32.6	33.5	1-1/2	1.566
Current machine average				27.6			10.3			36.3			32.6		1.566
Cumulative machine average				27.4			10.5			36.0			32.7		
Machine factor, %				100.9			98.8			100.7			99.5		
Machine index, %				102.3			100.0			102.3			101.1		

[a] Maximum tension at 600 f.p.m.

[b] 600 f.p.m., minimum tension.

[c] Maximum speed at which this roll could be corrugated with minimum tension was 450 f.p.m.

[d] Maximum speed at which this roll could be corrugated with minimum tension was 325 f.p.m.

TABLE XXX

SUMMARY OF TEST RESULTS FOR MACHINE CC
October and November, 1965

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M sq. ft.	Caliper, pt. Max.	Caliper, pt. Min.	Caliper, pt. Av.	Concora Flat Crush, p.s.i. Max.	Concora Flat Crush, p.s.i. Min.	Concora Flat Crush, p.s.i. Av.	Single-Face Flat Crush, p.s.i. Max.	Single-Face Flat Crush, p.s.i. Min.	Single-Face Flat Crush, p.s.i. Av.	Runnability, lb./in.[a]	Runnability, draw factor[b]
CC-1	--	9-27-65	101	27.6	10.9	10.1	10.5	31.8	27.0	28.8	25.2	22.4	24.1	min.	1.547
CC-2	--	9-27-65	201	27.6	11.1	10.3	10.8	31.2	28.2	29.6	28.2	26.4	27.5	min.	1.552
CC-3	--	9-27-65	301	29.0	12.0	11.3	11.6	40.8	36.6	38.3	34.6	32.4	33.4	min.	1.555
CC-4	--	9-27-65	401	29.1	11.5	10.7	11.0	42.6	37.2	39.7	35.0	32.4	33.4	min.	1.550
Current machine average				28.3			11.0			34.1			29.6		1.551
Cumulative machine average				----			----			----			----		
Machine factor, %				----			----			----			----		
Machine index, %				104.9			106.6			96.1			91.9		

[a] Maximum tension at 600 f.p.m.

[b] 600 f.p.m., minimum tension.

except basis weight for which only the average is shown; in addition, the over-all average result for all rolls submitted for a given machine is shown for each test property. The latter over-all averages are reported as "current machine averages." A cumulative machine average for each test property is also shown and represents the mean of the current machine averages for the previous twelve periods (excluding the current period). Also shown for each machine and for each test property in Tables II to XXX are the machine factor and machine index which are defined as follows:

$$\frac{\text{current machine average}}{\text{cumulative machine average}} \times 100 = \text{machine factor (\%)}$$

$$\frac{\text{current machine average}}{\text{cumulative F.K.I. average}} \times 100 = \text{machine index (\%)}$$

The machine factor and machine index provide a means for comparing the current machine average for each test property with either the previous results for the particular machine or with the cumulative results for all machines, i.e., the cumulative F.K.I. average.

DISCUSSION OF RESULTS

Shown below from Table I are the maximum and minimum current machine averages noted for each test property during the current period (October and November, 1965). Also shown below for each test property is the current F.K.I. average which represents the mean of the current machine averages for the current period and, hence, is indicative of the test level being maintained by the industry as a whole to the extent that the industry is represented by the participating machines. Also given below for each test property is the cumulative F.K.I. average which represents the mean of the current F.K.I. averages for the previous twelve months.

	Max. Current Machine Av.	Min. Current Machine Av.	Current F.K.I. Average	Cumulative F.K.I. Average
Basis wt., lb.	29.0	25.2	27.0	27.0
Caliper, pt.	12.0	9.0	10.4	10.3
Concora flat crush, p.s.i.	41.0	29.4	35.0	35.5
Single-face flat crush, p.s.i.	37.5	26.7	31.6	32.2

The runnability data for the 191 rolls evaluated during the current period are summarized as follows:

Runnability	Number of Rolls	Percentage of Total Rolls	Cumulative Percentage
Less than 600 f.p.m. with minimum tension	14	7.3	100.0
600 f.p.m. – minimum tension	56	29.3	92.7
600 f.p.m. – 1/2 lb. per in. tension	37	19.4	63.4
600 f.p.m. – 1 lb. per in. tension	23	12.0	44.0
600 f.p.m. – 1-1/2 lb. per in. tension	61	31.9	31.9

Supplementary to the runnability data described above, draw factors were determined for each roll of medium at 600 f.p.m. with minimum tension (or, for rolls with poor runnability, at the maximum speed runnable with minimum tension) and are given in Tables II through XXX for Machines A to Z and Machines AA, BB and CC, respectively.

In Table XXXI a comparison of Institute and mill Concora flat crush test results obtained on conditioned specimens is given for each machine for the current period. The inclusion of these comparisons is made possible by the fact that interested participants submit their Concora flat crush test results to The Institute of Paper Chemistry (on data sheets obtainable from the Institute). This affords each participant the opportunity to review the level of agreement noted for his data with the levels noted for the other participants. Comparisons of this kind are a helpful adjunct to other calibration procedures. Shown in Table XXXI are (1) the Institute and mill Concora averages for each roll included in these comparisons, (2) the difference between the roll average based on Institute data and that based on mill data, (3) the Institute and mill averages based on all rolls included in the comparison, and (4) the difference between these over-all averages.

The Concora flat crush data shown in Table XXXI are summarized in Part I of Table XXXII where for each machine the following information is given: (1) Current machine average based on Institute data, (2) current machine average based on mill data, (3) the average differences – that is, the difference between the current machine average based on Institute data and that based on mill data, and (4) the maximum difference encountered in comparing Institute and mill test averages for individual rolls. In Part II of Table XXXII the average differences given in Part I have been converted to per cent. Comparative data from the previous two reports are also included in Part II of Table XXXII.

TABLE XXXI

INSTITUTE AND MILL CONCORA FLAT CRUSH TEST RESULTS ON INDIVIDUAL ROLLS FOR OCTOBER AND NOVEMBER, 1965

Machine A

Code	Mill Roll No.	Date Made	Concora Flat Crush, p.s.i. Institute	Mill	Difference[a]
A-1	478	9-13-65	35.5	34.1	-1.4
A-2	61	9-29-65	39.6	36.6	-3.0
A-3	347	10- 7-65	39.0	35.6	-3.4
A-4	479	10-11-65	37.2	34.9	-2.3
A-5	1046	10-31-65	37.6	35.9	-1.7
A-6	48	11- 2-65	36.4	36.5	+0.1
Current machine av.			37.5	35.6	-1.9

Machine B

Code	Mill Roll No.	Date Made	Concora Flat Crush, p.s.i. Institute	Mill	Difference[a]
B-1	73	9- 2-65	32.2	31.0	-1.2
B-2	74	9- 8-65	33.2	32.3	-0.9
B-3	75	9-16-65	33.1	30.6	-2.5
B-4	76	9-25-65	32.4	31.6	-0.8
B-5	77	10- 7-65	30.2	26.3	-3.9
B-6	78	10-14-65	30.5	27.8	-2.7
B-7	79	10-21-65	30.0	26.6	-3.4
B-8	80	10-29-65	30.2	27.6	-2.6
Current machine av.			31.5	29.2	-2.3

Machine C

Code	Roll No.	Date Made	Concora Flat Crush, p.s.i. Institute	Mill	Difference[a]
C-1	183	9-26-65	37.6	34.6	-3.0
C-2	184	10- 4-65	36.2	35.3	-0.9
C-3	185	10- 5-65	33.5	36.1	+2.6
C-4	186	10-18-65	32.9	31.9	-1.0
C-5	187	10-24-65	33.2	31.1	-2.1
C-6	188	10-30-65	34.1	32.6	-1.5
C-7	189	11- 7-65	34.9	34.0	-0.9
C-8	190	11-18-65	32.9	34.6	+1.7
C-9	191	11-19-65	31.7	34.3	+2.6
Current machine av.			34.1	33.8	-0.3

Machine D

Code	Mill Roll No.	Date Made	Concora Flat Crush, p.s.i. Institute	Mill	Difference[a]
D-1	--	10-10-65	38.3	36.4	-1.9
D-1	--	10-11-65	40.1	38.2	-1.9
D-3	--	10-12-65	37.9	36.0	-1.9
D-4	--	10-18-65	37.9	37.1	-0.8
D-5	--	11-19-65	38.6	38.5	-0.1
D-6	--	11-22-65	38.4	39.1	+0.7
Current machine av.			38.5	37.6	-0.9

Machine F

Code	Mill Roll No.	Date Made	Concora Flat Crush, p.s.i. Institute	Mill	Difference[a]
F-1	J-1	10- 1-65	28.9	29.0	+0.1
F-2	J-2	10- 1-65	27.2	28.9	+1.7
F-3	J-3	10-17-65	31.3	29.3	-2.0
F-4	J-4	10-18-65	30.2	31.6	+1.4
Current machine av.			29.4	29.7	+0.3

Machine G

Code	Roll No.	Date Made	Concora Flat Crush, p.s.i. Institute	Mill	Difference[a]
G-1	656	9-20-65	38.2	38.0	-0.2
G-2	657	10- 1-65	37.0	39.7	+2,7
G-3	658	10- 4-65	35.6	37.9	+2.3
G-4	659	10-12-65	37.6	37.3	-0.3
G-5	660	10-19-65	35.9	39.7	+3.8
G-6	661	11- 1-65	36.6	39.5	+2.9
G-7	662	11- 7-65	34.9	34.9	0.0
G-8	663	11-13-65	35.9	37.7	+1.8
Current machine av.			36.4	38.1	+1.7

Machine H

Code	Mill Roll No.	Date Made	Concora Flat Crush, p.s.i. Institute	Mill	Difference[a]
H-1	3779	9-21-65	36.1	37.7	+1.6
H-2	5537	9-27-65	35.5	39.4	+3.9
H-3	490	10- 3-65	32.6	37.6	+5.0
H-4	2239	10-12-65	33.5	38.5	+5.0
Current machine av.			34.4	38.3	+3.9

Machine I

Code	Mill Roll No.	Date Made	Concora Flat Crush, p.s.i. Institute	Mill	Difference[a]
I-1	15	10-26-65	29.9	35.0	+5.1
I-2	16	10-26-65	31.4	36.2	+4.8
I-3	17	10-26-65	31.6	37.3	+5.7
I-4	18	10-26-65	30.0	33.1	+3.1
Current machine av.			30.7	35.4	+4.7

Machine J

Code	Roll No.	Date Made	Concora Flat Crush, p.s.i. Institute	Mill	Difference[a]
J-1	183	9-26-65	36.6	35.5	-1.1
J-2	184	10- 5-65	39.1	35.5	-3.6
J-3	185	10-13-65	31.3	33.6	+2.3
J-4	186	10-19-65	32.5	30.5	-2.0
J-5	187	10-24-65	31.2	33.4	+2.2
J-6	188	10-30-65	34.1	32.4	-1.7
J-7	189	11- 6-65	31.1	30.4	-0.7
J-8	190	11-18-65	28.9	29.2	+0.3
J-9	191	11-21-65	33.5	33.1	-0.4
Current machine av.			33.1	32.6	-0.5

Please see end of table for footnote.

TABLE XXXI (Continued)

INSTITUTE AND MILL CONCORA FLAT CRUSH TEST RESULTS ON INDIVIDUAL ROLLS FOR OCTOBER AND NOVEMBER, 1965

Machine K

Code	Mill Roll No.	Date Made	Concora Flat Crush, p.s.i. Institute	Mill	Difference[a]
K-1	----	10-10-65	36.6	35.6	-1.0
K-2	----	10-11-65	38.3	36.0	-2.3
K-3	----	10-17-65	35.6	35.5	-0.1
K-4	----	10-18-65	37.2	37.0	-0.2
K-5	----	11-11-65	32.8	35.5	+2.7
K-6	----	11-18-65	33.1	34.9	+1.8
K-7	----	11-19-65	36.7	35.2	-1.5
K-8	----	11-22-65	38.9	36.7	-2.2
Current machine av.			36.2	35.8	-0.4

Machine L

Code	Mill Roll No.	Date Made	Concora Flat Crush, p.s.i. Institute	Mill	Difference[a]
L-1	1420	9-23-65	34.4	31.8	-2.6
L-2	1421	9-23-65	34.8	36.2	+1.4
L-3	1428	10-11-65	32.6	33.6	+1.0
L-4	1429	10-11-65	34.3	34.0	-0.3
L-5	1436	10-11-65	32.6	34.4	+1.8
L-6	1437	10-11-65	30.6	33.8	+3.2
L-7	1444	10-28-65	29.5	29.9	+0.4
L-8	1445	10-28-65	32.0	32.8	+0.8
L-9	1452	11-15-65	30.4	30.7	+0.3
L-10	1453	11-15-65	33.7	33.6	-0.1
Current machine av.			32,5	33.1	+0.6

Machine M

Code	Mill Roll No.	Date Made	Concora Flat Crush, p.s.i. Institute	Mill	Difference[a]
M-1	66	9- 1-65	31.8	35.3	+3.5
M-2	67	9- 4-65	35.0	37.3	+2.3
M-3	68	9-12-65	34.4	37.9	+3.5
M-4	69	9-13-65	32.5	33.3	+0.8
M-5	70	9-26-65	32.0	35.1	+3.1
Current machine av.			33.2	35.8	+2.6

Machine N

N-1	26	9-14-65	34.3	31.7	-2.6
N-2	27	9-15-65	34.8	38.4	+3.6
N-3	28	9-20-65	33.5	31.4	-2.1
N-4	29	9-24-65	31.0	29.6	-1.4
N-5	30	10- 9-65	35.4	34.2	-1.2
N-6	31	10-11-65	34.6	35.0	+0.4
N-7	32	10-16-65	34.3	39.4	+5.1
N-8	33	10-24-65	30.5	33.5	+3.0
Current machine av.			33.5	34.2	+0.7

Machine O

O-1	---	9-24-65	37.6	36.4	-1.2
O-2	---	10-10-65	36.2	36.1	-0.1
O-3	---	10-20-65	34.7	35.6	+0.9
O-4	---	10-20-65	35.0	36.8	+1.8
O-5	---	11-22-65	34.7	35.6	+0.9
Current machine av.			35.6	36.1	+0.5

Machine P

P-1	521	9-16-65	37.4	38.2	+0.8
P-2	522	9-24-65	37.4	37.1	-0.3
P-3	523	9-27-65	39.1	39.5	+0.4
P-4	524	10- 4-65	37.9	39.6	+1.7
P-5	525	10-15-65	37.6	37.9	+0.3
P-6	526	10-21-65	35.3	36.7	+1.4
P-7	527	10-27-65	36.6	36.2	-0.4
P-8	528	11- 2-65	37.8	36.2	-1.6
Current machine av.			37.4	37.7	+0.3

Machine Q

Q-1	38	9-23-65	33.7	31.7	-2.0
Q-2	39	9-29-65	34.2	30.4	-3.8
Q-3	40	10- 7-65	31.0	37.7	-3.3
Q-4	41	10-12-65	34.3	38.0	+3.7
Q-5	42	10-21-65	35.0	36.4	+1.4
Q-6	43	10-28-65	31.8	33.6	+1.8
Q-7	44	11- 4-65	33.6	33.2	-0.4
Q-8	45	11-12-65	31.8	30.2	-1.6
Current machine av.			33.2	32.6	-0.6

Machine R

R-1	609	8- 1-65	40.2	37.6	-2.6
R-2	610	8-10-65	40.7	38.3	-2.4
R-3	611	9-14-65	42.4	38.3	-4.1
R-4	612	10-16-65	40.7	40.8	+0.1
R-5	613	10-16-65	40.3	41.9	+1.6
Current machine av.			40.8	39.4	-1.4

Machine S

S-1	192	9-13-65	34.8	32.1	-2.7
S-2	193	9-20-65	34.1	31.6	-2.5
S-3	194	9-22-65	35.2	34.0	-1.2
S-4	195	9-27-65	31.9	32.6	+0.7
S-5	196	10- 8-65	37.7	29.9	-7.8
S-6	197	10-12-65	30.7	30.2	-0.5
S-7	198	10-14-65	34.6	29.8	-4.8
S-8	199	10-18-65	32.0	37.3	+5.3
Current machine av.			33.9	32.2	-1.7

Please see end of table for footnotes.

TABLE XXXI (Continued)

INSTITUTE AND MILL CONCORA FLAT CRUSH TEST RESULTS ON INDIVIDUAL ROLLS FOR OCTOBER AND NOVEMBER, 1965

Machine T						Machine U						Machine V					
			Concora Flat Crush, p.s.i.						Concora Flat Crush, p.s.i.						Concora Flat Crush, p.s.i.		
Code	Mill Roll No.	Date Made	Institute	Mill	Difference[a]	Code	Mill Roll No.	Date Made	Institute	Mill	Difference[a]	Code	Mill Roll No.	Date Made	Institute	Mill	Difference[a]
T-1	424	9-15-65	38.5	37.1	-1.4	U-1	193	9-19-65	34.4	37.2	+2.8	V-1	744	9-22-65	42.0	40.3	-1.7
T-2	425	9-20-65	37.8	37.6	-0.2	U-2	194	9-19-65	34.6	36.7	+2.1	V-2	745	9-27-65	40.3	38.6	-1.7
T-3	426	9-20-65	38.2	38.3	+0.1	U-3	201	10- 1-65	37.2	36.4	-0.8	V-3	746	10-15-65	42.6	41.8	-0.8
T-4	427	9-27-65	38.4	37.4	-1.0	U-4	202	10- 1-65	35.2	36.7	+1.5	V-4	747	10-18-65	40.4	41.3	+0.9
T-5	428	10- 5-65	35.6	37.4	+1.8	U-5	209	11- 8-65	34.3	33.7	-0.6	V-5	748	10-20-65	41.4	40.6	-0.8
T-6	429	10-15-65	39.1	37.7	-1.4	U-6	210	11- 8-65	33.2	34.6	+1.4	V-6	749	10-26-65	39.5	38.3	-1.2
T-7	430	10-18-65	38.3	37.1	-1.2	U-7	217	11- 8-65	33.0	34.7	+1.7						
T-8	431	11- 4-65	36.4	37.8	+1.4	U-8	218	11- 8-65	35.0	36.4	+1.4						
T-9	432	11- 9-65	38.8	38.2	-0.6												
T-10	433	11-15-65	38.2	39.0	+0.8												
Current machine av.			37.9	37.8	-0.1	Current machine av.			34.6	35.8	+1.2	Current machine av.			41.0	40.2	-0.8

Machine W						Machine Y						Machine Z					
W-1	21	9-27-65	39.2	38.9	-0.3	Y-1	102	9-20-65	33.2	34.1	+0.9	Z-1	292	9-16-65	33.5	32.7	-0.8
W-2	22	10-11-65	37.3	36.8	-0.5	Y-2	103	9-20-65	33.6	36.1	+2.5	Z-2	293	9-19-65	42.0	38.7	-3.3
W-3	23	10-17-65	37.0	36.7	-0.3	Y-3	104	9-20-65	34.6	34.9	+0.3	Z-3	294	9-22-65	40.0	35.1	-4.9
W-4	24	10-26-65	34.3	35.0	+0.7	Y-4	105	10- 1-65	33.1	33.7	+0.6	Z-4	295	9-27-65	34.8	34.1	-0.7
W-5	25	11- 4-65	36.5	37.0	+0.5	Y-5	106	10-27-65	32.4	34.7	+2.3	Z-5	296	10- 8-65	40.0	35.8	-4.2
						Y-6	107	10-27-65	33.4	34.9	+1.5	Z-6	297	10-12-65	35.0	32.8	-2.2
						Y-7	108	10-27-65	32.6	36.4	+3.8	Z-7	298	10-14-65	40.9	38.3	-2.6
						Y-8	109	10-27-65	33.4	35.4	+2.0	Z-8	299	10-18-65	37.3	36.4	-0.9
Current machine av.			36.9	36.9	0.0	Current machine av.			33.3	35.0	+1.7	Current machine av.			37.9	35.5	-2.4

Machine AA						Machine CC					
AA-1	30	9-23-65	36.6	32.8	-3.8	CC-1	101	--	28.8	32.0	+3.2
AA-2	31	10- 2-65	32.6	26.6	-6.0	CC-2	201	--	29.6	30.2	+0.6
AA-3	32	10- 7-65	30.7	29.4	-1.3	CC-3	301	--	38.3	36.1	-2.2
AA-4	33	10-12-65	36.1	37.4	+1.3	CC-4	401	--	39.7	37.7	-2.0
AA-5	34	10-21-65	40.1	38.5	-1.6						
AA-6	35	10-28-65	33.6	31.4	-2.2						
AA-7	36	11- 4-65	33.0	31.8	-1.2						
AA-8	37	11-12-65	33.7	37.0	+3.3						
Current machine av.			34.6	33.1	-1.5	Current machine av.			34.1	34.0	-0.1

[a]This difference is the amount in p.s.i. units by which the mill result is higher or lower than the Institute result.

TABLE XXXII

PART I: A COMPARATIVE SUMMARY FOR EACH MACHINE OF THE CONCORA FLAT CRUSH AVERAGES BASED ON INSTITUTE DATA AND THOSE BASED ON MILL DATA

Machine code	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC
Number of rolls compared	6	8	9	6	0	4	8	4	4	9	8	10	5	8	5	8	8	5	8	10	8	6	5	0	8	8	8	0	4
Concora flat crush, p.s.i.																													
Current machine av. (Institute)[a]	37.5	31.5	34.1	38.5	---	29.4	36.4	34.4	30.7	33.1	36.2	32.5	33.2	33.5	35.6	37.4	33.2	40.8	33.9	37.9	34.6	41.0	36.9	---	33.3	37.9	34.6	---	34.1
Current machine av. (Mill)[a]	35.6	29.2	33.8	37.6	---	29.7	38.1	38.3	35.4	32.6	35.8	33.1	35.8	34.2	36.1	37.7	32.6	39.4	32.2	37.8	35.8	40.2	36.9	---	35.0	35.5	33.1	---	34.0
Average difference[b]	-1.9	-2.3	-0.3	-0.9	---	+0.3	+1.7	+3.9	+4.7	-0.5	-0.4	+0.6	+2.6	+0.7	+0.5	+0.3	-0.6	-1.4	-1.7	-0.1	+1.2	-0.8	0.0	---	+1.7	-2.4	-1.5	---	-0.1
Maximum difference[c]	-3.4	-3.9	-3.0	-1.9	---	-2.0	+3.8	+5.0	+5.7	-3.6	-2.7	+3.2	+3.5	+5.1	+1.8	+1.7	-3.8	-4.1	-7.8	+1.8	+2.8	-1.7	+0.7	---	+3.8	-4.9	-6.0	---	+3.2

PART II: A TABULATION FOR EACH MACHINE OF THE AVERAGE DIFFERENCE (PER CENT) BETWEEN THE CONCORA FLAT CRUSH BASED ON INSTITUTE DATA AND THAT BASED ON MILL DATA

Average difference, %[d]																													
Current report (Oct.-Nov.)	-5.1	-7.3	-0.9	-2.3	---	+1.0	+4.7	+11.3	+15.3	-1.5	-1.1	+1.8	+7.8	+2.1	+1.4	+0.8	-1.8	-3.4	-5.0	-0.3	+3.5	-2.0	0.0	---	+5.1	-6.3	-4.3	---	-0.3
115th report (Aug.-Sept.)	-4.4	-1.7	-5.5	+1.7	---	+8.0	+8.2	+2.3	+5.8	-4.9	-2.4	+2.9	+12.9	-1.7	+3.4	-1.4	-4.4	+3.4	-3.1	+0.3	+6.5	+0.5	-1.6	---	+3.1	-4.2	-4.2	---	---
114th report (June-July)	-5.7	-15.1	-2.9	+0.3	---	+9.5	+2.6	0.0	+8.1	-6.0	-1.1	+0.5	+7.0	+1.7	-0.6	+7.0	-9.3	-3.8	-2.9	+1.0	+2.9	-3.8	-4.7	---	+3.2	-6.5	-3.9	---	---

[a] Comparisons based on current machine average include only those rolls for which mill data were submitted.

[b] Average difference is the difference between the current machine average based on institute test results and that based on mill test results with the Institute test results used as the reference. See Table XXXI.

[c] Maximum difference is the greatest difference encountered in comparing Institute and mill test averages for individual rolls. See Table XXXI.

[d] Average difference (per cent) is computed by dividing the average difference in p.s.i. (shown above in Part I of this table) by the Institute current machine average and multiplying the result by 100.

In Table XXXIII a summary of the agreement between Institute and mill Concora flat crush data is given for the current period; comparative data from the previous bimonthly period are also included. The data shown for the current period indicate that agreement between Institute and mill Concora data was good and, at most levels of comparison, somewhat better than the agreement for the previous period.

TABLE XXXIII

SUMMARY OF AGREEMENT BETWEEN INSTITUTE AND MILL
CONCORA FLAT CRUSH DATA

Average Percentage Difference Between Institute and Mill Concora Flat Crush Test Results[a]	Percentage of All Machines Included Within the Indicated Range	
	Previous Period[b]	Current Period[c]
± 1.0	7.7	23.1
± 2.5	34.6	53.8
± 5.0	73.1	73.1
±10.0	96.2	92.3
Max.	100.0[d]	100.0[e]

[a] The average obtained at the Institute was used as the reference in the calculation of the percentage differences.

[b] August and September, 1965.

[c] October and November, 1965.

[d] Maximum percentage difference was 12.9.

[e] Maximum percentage difference was 15.3.

THE INSTITUTE OF PAPER CHEMISTRY

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